The Valley’s Topoclimate and Its Influence on The Vegetation

Abstract

The thesis as presented deals with specific valley's topoclimate of a chosen example of one particular valley located near the city Jílové u Prahy. The main objective of the thesis which has been defined is to evaluate the topoclimate of the determined area and its influence on the phytogeographical and phenological situation of the valley. The outdoor temperature measurements carried out by using Assmann's psychrometer as well as the observations of the plant's phenological state have been taken in the course of repeated expeditions into the valley in 2011 and 2012. The formations of night valley's inversions have been confirmed. The temperature gradient of 6 °C and three and half an hour long inversion following the sunrise have been recorded as a result of the measurement performed on 28th April 2012. As a consequence of the valley's parts shading the temperature differences have been proven. As a referential meteorological station the faculty's own station situated on the peak of Pecný hill and the automated personal weather station in Okrouhlo were used. The lower temperatures in the valley have a clear impact on the commencement of the plant's phenological stages. A detailed phenological scale was created in order to observe empirically the hazel trees and horn-beams. As the most suitable for the observation purposes seemed to be the horn- beams. The hazel trees had in the initiative vegetative stages a considerable time disparities between the commencements in the different localities. The commencement of the phenological stage when the hazel trees' fruits begin to ripen has been observed in the fall of 2011. The recorded difference between the places located in the valley and above it was 24 days. In order to compare the data, I have used the data recorded in the Šindelová station, which is situated the in chilly area of the Krušné hory (Ore Mountains). When comparing the data I focused on the temperature characteristics and the wind directions of the sunny summer days. The phenological characteristics have been reckoned on the basis of phenological data regarding the hazel tree.

Keywords:

valley's topoclimate, valley inversion, phenology, frost hollow, Horní a Dolní Studené, hornbeam (*Carpinus betulus*), hazel (*Corylus avelana*), lesser celandine (*Ficaria verna*)